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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/669,934

09/23/2003

Ahmad Nouri

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INTERNATIONAL BUSINESS MACHINES CORP

IP LAW

555 BAILEY AVENUE , J46/G4

SAN JOSE, CA 95141

EXAMINER

LE, MIRANDA

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/669,934

Applicant(s)

NOURI ET AL.

Examiner

Miranda Le

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/23/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. Applicants' Information Disclosure Statement, filed 09/23/2003, has been received, entered into the record, and considered. See attached form PTO-1449.

### *Specification*

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because it exceeds 150 words limit.

Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: on page 12, line 22, the path expression "b.a.rd" should be changed to "b, a.rd".

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 5-8, 10-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyer et al. (US Patent No. 5,774,692), in view of Cheng et al. (US Patent No. 5,963,933).

**As to claims 1, 6, 11**, Boyer teaches an article of manufacture for use in a computer system for translating a path expression in an object oriented query to a relational database outer join, said path expression comprising a navigation path through a relationship in a schema, said article of manufacture comprising a computer-useable storage medium having a computer program embodied in said medium which causes the computer system to execute the method steps comprising:

analyzing each path expression (i.e. SQL parser component 105, col. 9 line 3) defined in each level of the object oriented query (col. 8 line 58 to col. 9 line 17);

identifying each path expression which can be a candidate (i.e. outer qualification, col. 9 line 54) for a translation to an outer join (col. 9 line 46 to col. 10 line 29);

ordering the path expression starting with path expression defined in a FROM clause (i.e. FROM Supplies s, col. 9 line 34), adding to the FROM clause path expression (i.e. s.parts, col. 10 lines 59-61), each path expression identified as a candidate for a translation to an outer join, and making the ordered path expressions as input to a select operator for each level of the object oriented query (col. 9 lines 46-65; col. 10 line 53 to col. 11 line 54);

grouping the ordered path expressions (i.e. s.parts, col. 10 lines 59-61) sequentially based upon on a source-target dependency between ordered path expressions and based upon the identifications as a candidate for a translation to an outer join (col. 9 lines 46-65; col. 10 line 53 to col. 11 line 54);

completing a translation (i.e. The plan 110 generated by the optimizer is then executed by the query evaluation subsystem, col. 11 lines 18-21) of the object oriented query to a relational query (col. 11 lines 13-45).

Boyer does not expressly teach the following limitations. However, Cheng teaches:

creating a quantifier for each path expression, said quantifier comprising a variable representing a table in a relational database (col. 10 lines 15-42);

replacing each grouped path expression with a corresponding quantifier and related table in a relational database (col. 10 lines 15-42).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references because Cheng's teachings of creating a quantifier for each path expression, said quantifier comprising a variable representing a table in a relational database; and replacing each grouped path expression with a corresponding quantifier and related table in a relational database would have provided Boyer's users a novel method of evaluating SQL "full

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outer joins", which methodology enables the use of arbitrary join conditions in specifying the query.

**As to claims 2, 7, 12,** Cheng teaches the embodied computer program embodied in said medium can further cause the computer system to execute the method steps comprising:

performing optimization on the grouped quantifiers, said optimization identifying quantifiers which can be a candidate for a translation to an inner join at col. 10 lines 15-42.

generating an outer join for each quantifier which remains after optimization a candidate for a translation to an outer join at col. 10 lines 15-42.

generating an inner join for each quantifier which remains after optimization a candidate for a translation to an inner join at col. 10 lines 15-42.

**As to claims 3, 8, 13,** Boyer teaches the optimization identifies a quantifier as a candidate for a translation to an inner join if a corresponding path expression is used in a FROM clause (col. 9 line 34).

**As to claims 5, 10, 15,** Cheng teaches the optimization identifies a quantifier as a candidate for a translation to an inner join if an EQUAL, LESS THAN, GREATER THAN, LESS THAN OR EQUAL, GREATER THAN OR EQUAL, NOT EQUAL, or NOT NULL operator exists in a WHERE clause (col. 4, line 30-49).

6. Claims 4, 9, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyer et al. (US Patent No. 5,774,692), in view of Pirahesh et al. (US Patent No. 5,548,754).

As to claims 4, 9, 14, Boyer and Cheng do not expressly teach the optimization identifies a quantifier as a candidate for a translation to an inner join if a LIKE, IN, or BETWEEN operator exists in a WHERE clause containing a corresponding path expression.

However, Pirahesh teaches this limitation at col. 9 lines 1-8:

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Boyer and Cheng with the teaching of Pirahesh to include the optimization identifies a quantifier as a candidate for a translation to an inner join if a LIKE, IN, or BETWEEN operator exists in a WHERE clause containing a corresponding path expression because it would provide an optimization of SQL queries in a relational database management system using early-out join transformations.

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*Conclusion*


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

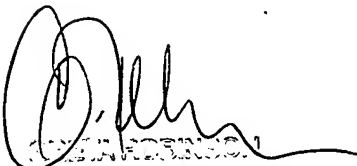
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Miranda Le  
March 24, 2006

  
JOHN BREENE  
SUPERVISOR